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PROJECT TITLE:

ONLINE FEEDBACK SYSTEM

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ABSTRACT

Currently, FSKTM, and many other universities as well, conducts manual course-end surveys in which each student will have to complete a paper survey form to evaluate each of the courses they have taken during a particular semester. This Online Feedback System is designed to automate this manual survey process by putting the entire evaluation system online. Students can login to take the survey through a Web interface, results are retained in a database, and survey statistics can be accessed on the Website. The objective of this system is to develop a system that enables the students to take this survey from any remote location that has an Internet connection.

This project will focus on three modules which are Administrator module, Lecturer module and Student module. Administrator has the authority to create or modify questions, where as the lecturers will be able to view and print report according to course code, semester and instructors name. Students will select categories such as department, course code, year/ year graduated, view and give feedback.

The web server for this system is the Internet Information Server (IIS) running under the Microsoft Windows 2000. Active Server Pages (ASP) will be the main programming language technology while Database will be created and stored from Microsof Access base on the system requirement.

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CHAPTER 1: INTRODUCTION

1.1 BACKGROUND TO PROJECT

Education plays an important role in today's world. Education is the most basic necessity after those that are vital to life itself--food, clothing, and shelter. There are so many ways to gain knowledge and education but does all this education system fulfill the standard and requirements?

Feedback can be a powerful tool that can improve learning for both students and teachers. The objective of this feedback system is to monitor and assess the course in order to improve and increase the standard of learning.

This FSKTM student feedback system is the on-line version of the module review questionnaire sheet which is issued for FSKTM student to give their comment on not only FSKTM degree courses but also the lab facilities and others. The results of these questionnaires will be used by the administration and lectures to upgrade the quality of the courses. FSKTM current system demands a manual effort, where a graduate assistant or lecturer have to distribute the survey forms in class, and students have to complete the form at that particular time and submit it back to the university. This is a very time consuming administrative task for the lecturers and students. This electronic questionnaire enables students to take the survey at any remote location that has an internet connection.

1.2 OVERVIEW

The Online Feedback System is a web-based application that enables students and staff of FSKTM to register feedback information to an independent entity managing feedback. As the application is web-enabled, it allows online global coverage of feedback from any part of the world at anytime. The system consists of several simple questions, which are closed ended, and are geared towards soliciting the opinion of students, while ensuring their anonymity. Typical categories of feedback may include the following areas:

- Classroom facilities
- Computer Labs Facilities
- Lecturer
- Others

Students taking the online survey will have to logon to the Website and complete the survey, which is stored in a database. The database maintains historical survey results for courses by the following categories: course code, semester and instructor.

The system also allows an administrator to create or modify questions for the students. The system allows the instructor to view the results by instructor, course and semester. The results of the students' answers are compiled, statistically analyzed by the program and displayed both numerically and graphically. How the results are displayed is based on the needs of Faculty.

1.3 OBJECTIVE

This proposed system is based on developing an Online Feedback System for Faculty of Computer Science and Information Technology (FSKTM), University of Malaya. The FSKTM current system demands a manual effort, where a student or lecturers have to distribute the feedback forms in class, and students have to complete the form at that particular time and submit it back to the university which is very time consuming. Besides that those who are absent won't be able to give their feed back. The objective of this online feedback system is

- To develop a secured system where only authorized personnel can access.
- To develop a system where the system allows an administrator to create, delete and edit questions.
- To develop a system where lecturers may view all results by instructors and courses.
- To generate report on student's feedback instantly and accurately
- To develop a system where lecturers may print the report by instructors and courses.
- To develop a system that enables the students to take this survey from any remote location that has an Internet connection and a current Internet browser.
- To develop a system that allows the users to take this survey at any time.
- To develop a system to inform faculty and administration how the students feel about the course, how they like the facilities provided by the university and also to evaluate how effective a lecturer's teaching is

- To develop a system where the student can submit the feedback on-line

1.4 SCOPE

This system allows student to give their feedback by instructor, semester and course. This enables the lecturers to view the feedback on their teaching as one lecturer might be teaching two or three courses and one student may be taking more than one course for the particular semester. The lecturer will have to just type in their name and the course code and they will be able to view the report.

This project will focus on three modules which are Administrator module, Lecturer module and student module.

Admin Module: -

The administrators will add, edit, delete, view and update any data on users registration records and even the questions which is stored in database.

Lecturer Module: –

The lecturers will be able to view students feedback and print report according to course and instructors.

Student module: -

Students will select categories such as department, course code, year/year graduated, view and give feedback.

This system is secured where only authorized person can access to this system. In order to access to this system the lecturer and the student will have to register first and log-in using their user name and password. Students have

to use their metric number as a user name. Those without metric number won't be able to access to this system, this is to ensure that only FSKTM students will be able to log-in to this system. Administrator has ti e authority to create or modify questions for the students and customize reports and graphs using the online feedback system. Most probably SPSS will be used in my proposed system to generate the report. SPSS is a comprehensive and flexible statistical analysis and data management system that generates tabulated reports, charts, and plots of distributions and trends, descriptive statistics, and conduct complex statistical analyses.

1.5 IMPORTANCE OF THE PROJECT

Basically the importance of this online feedback system is to reduce paper waste, printing cost and to reduce data compilation errors. Besides that the importance of this project to lecturer, administrator and students are listed as below.

For Lecturer:

- to provide information for course design
- to further develop teaching skills
- to match learning to learners needs
- to support bids for funding teaching projects

For Administrator:

- Reporting dynamically and up-to-date information as the information arrives.

For Student:

- Giving the students give their comment at their own leisure
- A single system administrator can replace the work done by students help.

1.6 PROJECT SIGNIFICANCE

- Student ratings provide faculty with feedback from students on their teaching.
- Student ratings help faculty understand the strength and weakness of a course.
- Through student comments, instructor may gain ideas on how to improve a course.

1.7 DEFINATION

Authorized user:

- Someone that is given authority or right to use something, in this case system.

Edit:

- To make changes, as additions or deletions, to a file or document.

Feedback:

- Feedback is not praise or blame. It's what you did and did not do, whether you realized it or intended it.

Interface:

- Hardware or software that forms link between devices and allows them to communicate with each other.

Operating System:

- A program that directs all of the basic function of a computer.

Platform:

- An operating system such as MS-DOS, or a graphics interface such as Windows under which program runs

Security:

- The process of protecting a computer, computer network , or computer programs and data from access by unauthorized persons

Software:

- Any program or routine, such as an application system file or device driver that furnishes instruction to the computer.

CHAPTER 2: REVIEW OF LITERATURE

2.1 ROLE OF LITERATURE REVIEW

A literature review is an evaluative report of information found in the literature related to our selected area of study. The purpose is to guide students and researches using the best way to access and analyze information regarding their research topic. In general, the literature review should:

- Provide a context for the research
- Justify the research
- Illustrate how the subject has been studied previously
- Help refine, refocus or even change the topic

Writing a literature review improve our skills in two areas:

1) **Information seeking**: the ability to scan the literature efficiently, using manual or computerized methods, to identify a set of useful articles and books
2) **Critical appraisal**: the ability to apply principles of analysis to identify unbiased and valid studies.

A literature review must:

a. Be organized around and related directly to the thesis or research question you are developing
b. Synthesize results into a summary of what is and is not known
c. Identify areas of controversy in the literature
d. Formulate questions that need further research

2.2APPROCH TO LITERATURE REVIEW

For this project, several techniques have been used to seek information. These techniques are as follow:

1) Internet Surfing:

Internet is the main source of information. Relevant information on web application, software, client server and programming tools are analyzed. Many information and ideas can be gained by browsing current systems that are available in the internet. Besides that there are so many search engines that can be used to find information such as Yahoo, Google, Altavista, Metacrawler and MSN search.

2) Analysis on the past year final project:

Studies on past year project helped me gain some knowledge on software development.

3) Discussions with lecturer and friends:

Advises and ideas have been given by the lecture during every meeting. Suggestions given by friends are also useful throughout the development of the project.

2.3FINDINGS

2.3.1Current online feedback system

1.Course Ratings

http://www.med.mun.ca/feedbackpeds/Peds%20Web%20Eval%20graphs.htm

This website is design so that students can give their feedback and enables the instructors to view and print the report displayed by the system

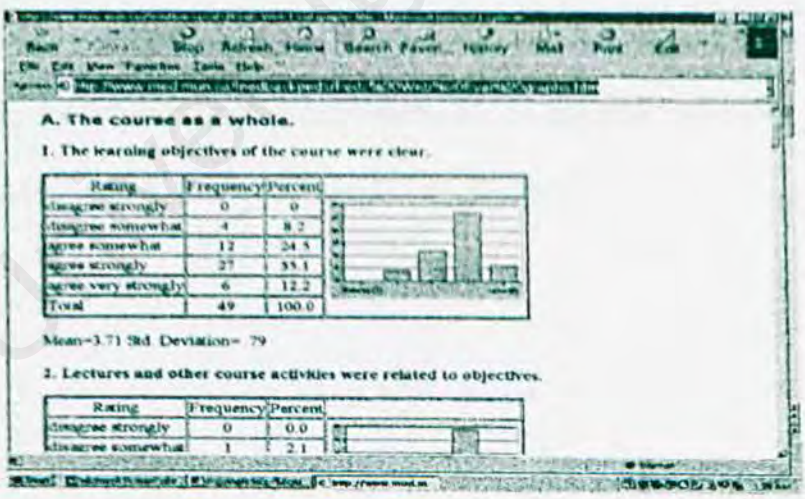

Figure 2.1: Interface that displays the graph.

2.Online Course/Instructor Opinion Survey

https://intranet.gatech.edu/cfprod/cios/student_general_help.html

This website includes the reasoning behind using an online student ratings system and how to ensure anonymity of students' responses. Formative and summative rating forms are provided.

3.Online course-evaluation http://survey.poly.edu/Ceval/CevalSp.shtml

This website displays a sample online course-evaluation form. Responses are selected from a drop down list for each item.

4.Online Course Opinion Survey System

http://research.nhmccd.edu/apps/eval/cr/cr1.asp?atype=S

This website is designed to automate the current manual survey process by putting the entire evaluation system online. Pace University have run preliminary tests on the system, and intend to run in parallel both the old and new survey systems on all Pace University CSIS courses at the end of this semester for a department-wide test. The database of this system maintains historical survey results for courses by the following categories: department, course code, semester, year and instructor. Below is an example of the digital questionnaire.

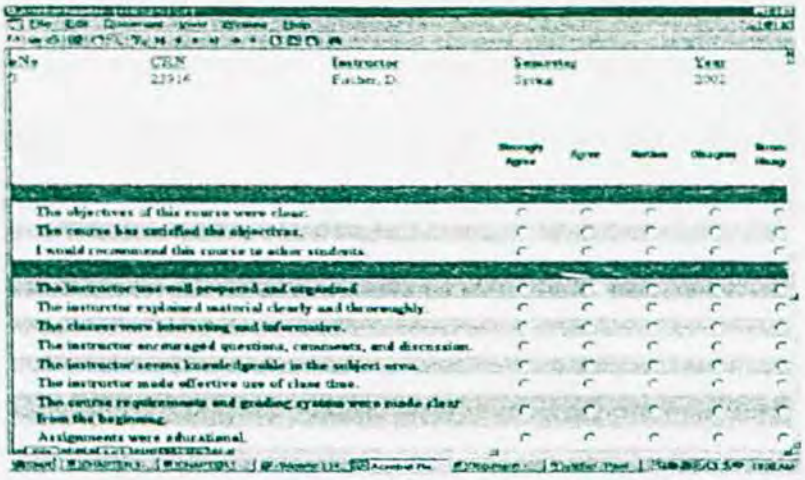

Fig 2.2: Survey Form with questions and answer options.

5.Indiana Education System

http://ic.educ.indiana.edu/

Includes a site for students, faculty, and administrators to access the online-course-evaluation system.

6.USC Website support

http://www.USCwebsitesupportfeedbacksystem.htm

This website shows one of the services the ISG offers to University departments and events which is a generic feedback system. This document contains information supporting the feedback system offered on this server.

7.Introduction to the On-Line Course Evaluation Reports

http://gsbwww.uchicago.edu/curriculum/courses/eval.html

This Website requires students to evaluate their instructors' performance by answering 15 questions that require 12 numerical and 3 descriptive responses. After all instructors have submitted final grades, the averaged results of all valid student responses to the 12 quantitative questions will become available to the GSB community.

2.3.2 SOFTWARE AND TECHNOLOGY

This section shows the software and technology taken into my consideration when building the system. The main areas of research are

- system architecture,
- web languages technology
- database management system.

2.3.2.1CLIENT-SERVER COMPUTING

Client-server architecture can be defined by how the components of the application are split up among software entities (Client and Servers) and distributed on the network. Based on how to arrange presentation, business logic and data layers, client/server physical architectures are often categorized in term of tiers.

Two-tier client-server architecture

Two-tier client/server architecture places the presentation on the client and the database layer on the server. The business logic may be distributed either

on the client, or on the server. When the client is responsible for most of the data processing, it is called fat client. Otherwise, it is called thin client. Therefore, two-tier client-server architecture can be either client-based processing or host-based processing.

Advantages :

A two-tier architecture can be fast to develop. Using any one of a growing number of PC-based tools like Microsoft Visual Studio and Access, a single developer can model data and populate a database on a remote server, paint a user interface, create a client with application logic, and include data access routines. Most two-tier tools are also extremely robust. Work well in relatively homogeneous environments with fairly static business rules. Good performance when the application server running on the same physical server hardware as the database.

Disadvantages:

It is less suited for dispersed, heterogeneous environments with rapidly changing rules. As such, relatively few IS organizations are using two-tier client/server architectures to provide cross-departmental or cross-platform enterprise-wide solutions. This architecture works fine until the number of people interact on a LAN simultaneously gets large. When the number of users exceeds 100, performance begins to deteriorate. This results from the fact that the server maintains a connection via "keep-alive" messages with each client, even when no work is being done.

Three-tier client-server architecture

Three-tier client/server applications break all the three layers into independent sections, with presentation layer on the client, the business logic on one or more dedicated servers, and the database logic on one or more super servers or mainframes. The business logic running on its own computer is usually called an application server. All application servers might receive database services from a centralized computer, perhaps a mainframe. And no matter how the application server is deployed, all users operate the application in exactly the same way from the client. The locations of the application server and the database server are irrelevant to the user. For example, when you browsing on the web, your browser knows nothing about the structure of the database at Amazon.com. However, you are nevertheless able to interact with that database when you order a book. This is the result of well-defined Internet protocols that allow the client (the browser) to talk to an application server (a Web site).

Advantages:

A key advantage of having an application server is that it can be located in the best place to serve the need. This architecture has been shown to improve performance for groups with a large number of users (in the thousands). It improves flexibility when compared to the two tier approach. Flexibility in partitioning can be a simple as "dragging and dropping" application code modules onto different computers in some three tier architectures.

Disadvantages:

The development environment is reportedly more difficult to use than the visually-oriented development of two tier applications. The technology is not enough mature for mission-critical application.

N-tier client-server architecture

The term "n-tier" refers to the fact that an application server can request services from many other services as needed to respond properly to the client's original request. In such case, the calling application server itself can be seen as the client of the called services. The message flows can get pretty complex. Therefore, N-tier client-server architecture can be regarded as the combination of multiple three-tier or two-tier client-server architectures

2.3.3 WEB APPLICATION ARCHITECTURE

Web applications use Internet protocols such as TCP/IP, Hypertext Transfer Protocol (HTTP) and Hypertext Markup Language (HTML) for implementation displays and networking protocol to achieve architecture that are robust, scalable and that can accommodate rapidly changing technology.

2.3.4 WEB BASED APPLICATION

A typical web-based application, by its browser/server nature, follows the two tier or n-tier model. Applications designed for the World Wide Web place the least number of the application the client, and keep all the processing centralized on one or more servers.

2.3.5WEB BROWSER

The Web Browser is the client program that users run on their local machine to gain access to a Web Server. It is a user-interface or document-presentation tool. It only knows how to take information from the server and present it to the user. It is also able to capture data entry made into a form and get the information back to the server for processing. Web browsers are multimedia enabled. They can process text, graphics, audio and video, which are marked up or embedded in HTML documents. One of the powerful features of HTML documents is the function of hyperlinks.

Currently, the most popular browsers are Netscape Navigator/Communicator and Microsoft Internet Explorer. The features of a browser software have expanded to encompass the ability to access other Internet services in addition to the World Wide Web.

- **Microsoft Internet Explorer**

Internet Explorer was developed by the Microsoft Corporation and can be used on PCs running Windows 3.1 or better, or on Macintosh systems.

Microsoft Internet Explorer (Internet Explorer or IE for short) is a graphical web browser which enables a user to fully experience the hypertext, photographs, sound and video, that are available on the World Wide Web.

Internet Explorer utilizes "point-and-click" technology to select hypertext links and uses drop-down menus and toolbar buttons to navigate and access resources on the Internet.

- **Netscape Navigator**

Netscape Navigator is one of the best web browser available. It provides the user with brilliant graphics, sophisticated page layouts and high speed downloads. The Netscape Navigator gives a user the ability to read and send e-mail, transfer fails (FTP), or read and post Usenet news. It can also be configured to access new media types, such as video, or run other applications within the browser through Helper Applications or Plugins.

2.3.6 OPERATING SYSTEM

An operating system is a program that acts as an intermediary between a user of a computer and the computer hardware. Operating system provide an environment in which a user can execute programs in a convenient and efficient manner. There are few types of operating systems such as Windows, Dos, Linux and Unix.

- **Microsoft Windows 2000 Professional**

Windows 2000 Professional is a built on NT Technology, which offers rock-solid reliability and improved manageability that simplify desktop management.

Advantages:

Manageable and Easy to Use:

Windows 2000 Professional offers a set of built-in tools that make it easier to deploy and manage. In addition, Windows 2000 Professional offers an intelligent user interface that adapts to the way users work thereby making the users more efficient.

Reliable:

Windows® 2000 Professional is significantly more reliable than either Windows 95 or Windows 98 technology. Reliability improvements in Windows 2000 Professional make it even more stable than Windows NT Workstation. Windows 2000 Professional offers high system uptime, dynamic system configuration and resilience to application failures.

Built for Mobile Users:

Windows 2000 Professional enables users to Work Anywhere, Anytime through support for offline folders and files.

- **Windows 2000 Advanced Server**

Windows 2000 Advanced Server includes all the new features of Windows 2000 server, and in addition offers enhanced memory support, support for additional processors and clustering where server applications can run faster, providing better response for users on the network. Windows

Clustering is a feature of Windows 2000 Advanced Windows 2000 Advanced Server has various functions such as File server, Print Server, Internet server, Multimedia server, Application server, development support, networking and communications. It also takes care of server reliability, availability, scalability and security.

2.3.7 WEB APPLICATION DEVELOPMENT

Web application development is software that is used to design the interface of the system.

- **MS-FrontPage 2000**

FrontPage 2000 can be used to create accessible web content. Many accessibility features can be added from FrontPage 2000's main interface. The FrontPage application has been updated so that it no longer "fixes" your HTML when you make a change to the code.

FrontPage 2000 allow users to work together with MS-Office to save time and was designed to function more like MS-Office so that users can set up and run with FrontPage more quickly than ever. The Microsoft FrontPage 2000 web site creation and management tools allow users to easily create web pages exactly the way they want it to. It enables quick and flexible management of Internet and Intranet web sites.

Advantages:

- MS-FrontPage is easy to get started with.
- FrontPage helps users at all levels save time
- Can get started quickly with FrontPage because it looks and works like Microsoft Office.
- FrontPage is broadly available and broadly used.

- **Macromedia Dream Weaver MX**

The Macromedia MX is an integrated suite of tools, server, and client technologies which streamline the creation and delivery of everything from a simple website to Rich Internet Applications. Macromedia MX products are easy to use, provide powerful capabilities, and integrate with existing standards and technology investments. Dreamweaver MX combines its renowned visual layout tools with the rapid web application development features of Dreamweaver UltraDev and the extensive code-editing support of Macromedia HomeSite.

Advantages:

Easy

Achieve complete control over code and design. User can build the site they want, the way they want it, using the visual layout tools of Dreamweaver combined with the code-editing tools of HomeSite.

Powerful

Rapidly develop Internet applications for the latest server technologies. Drag-and drop visual tools and robust code-editing support make it easy to develop for any popular server technology.

2.3.8 PROGRAMMING TOOLS

2.3.8.1 Client-Side Programming Language

- **Java Script**

A scripting language developed by Netscape to enable Web authors to design interactive sites. Although it shares many of the features and structures of the full java language, it was developed independently. Java Script can interact with HTML source code, enabling Web authors to spice up their sites with a dynamic content. Javascript can be run at the server, as in Microsoft's Active Server Pages before the pages is sent to the requestor. Both Microsoft and Netscape Browser support java script, but sometimes in slightly different ways.

- **VB Script**

VBScript the newest member of the Visual Basic family of programming languages brings active scripting to a wide variety of environments, including web client scripting in MS-Internet Explorer version 3.0 and Web Server Scripting in MS-Internet Information Server Version 3.0.

VBScript syntax is based on that of Visual Basic. If we already know Visual Basic or Visual Basic for applications, VBScript will be very familiar. Even if

we don't know Visual Basic, once we learn VBScript , we actually programming with the whole family of Visual Basic Languages.

VBScripts talks to host applications using Active X Scripting. With ActiveX Scripting, browsers and other host applications don't require special integration code for each scripting component. Active X scripting enables a host to compile scripts, obtain and call entry points and manage the namespace available to the developer. With ActiveX Scripting Language vendors can create standard language run times for scripting. MS-will provide run-time support for VBScript.

- **Hypertext Markup Languages (HTML)**

HTML is the language used to prepare web hypertext document. HTML consists of commands and elements to mark text, headings, paragraphs, quotations etc. It also has tags for including images within the document, fill-in form that accept user input and most importantly, for including hypertext links connecting the current document to other Internet resources such as anonymous Files Transfer Protocol (FTP) sites. It is this latest feature that allows the user to click from a computer thousands of miles away. This can be accessed through a Uniform Resource Locator (URL), which is included in the HTML markup instructors and is used by the users browser to find the designated resource.

Writing Good HTML document involve balancing between technical issues and design issues. Technical issues involve proper construction of document while design issues ensure that information is clearly presented to the user. HTML can be used to create web pages without any specialized software in less

time that it takes to schedule and want for an appointment with a highly paid HTML wizard. It is infect a language that can be learned very fast by example.

2.3.8.2 SERVER-SIDE PROGRAMMING LANGUANGE

- **Active Server Pages (ASP)**

Active Server Pages is a new technology from Microsoft that provides the capability for the Web server to process application logic and then deliver standard HTML to the client browser. The results can then be delivered to a variety of client-side web technologies, such as standard HTML, ActiveX, Java, browser plug-ins and DHTML.

Microsoft ® Active Server Pages (ASP) is a server-side scripting environment that can be used to create interactive Web Pages and build powerful Web applications. ASP files can contain HTML(I\including related client-side scripts) as well as calls to COM components that performed a variety of tasks, such as connecting to a database or processing business logic. Active Server Pages give us the ability to deliver more than just HTML. ASPS enable us to deliver HTML, client-side scripting, web control, and server-side processing and connectivity features. ASP scripts can deliver client side scripts such as VBScript and JavaScript, to be executed on the clients browser. IN addition, ASP can also deliver wide range of Web functionality by acting as a transfer vehicle for ActiveX Controls, Java Applets, and other web components. In addition, ASPs not only produce dynamic HTML depending on the client's request, but also provide the capability to tap into existing systems, such as database, document retrieval services, mail servers, groupware servers, and other COM-based information servers. ASPs now act as an HTML interpreter that was once only accessible through native

interfaces, such as Microsoft Exchange client, Lotus Notes client, or customized Visual Basic applications. With the wide range of functionality, Active Server Pages and the Internet Information Server act as a medium for porting existing applications to-and building new applications for – the web.

2.3.9 SERVER TYPE

There are many different types of server and below are some of the category.

2.3.9.1 WEB SERVER

Web server allow user to serve content over the Internet using the Hyper Text Markup language (HTML). The web server accepts requests from browsers like Netscape and Internet Explorer and then returns the appropriate HTML documents. A number of server-side technologies can be used to increase the power of the server beyond its ability to deliver standard HTML pages; these include CGI scripts, server-side includes, SSL security and Active Server Pages (ASPs).

- **Internet Information Server (IIS)**

IIS was designed to run only on the Windows NT and 2000 operating systems .Microsoft Internet Information (IIS) comes bundled with Microsoft's Windows 2000 Server operating systems. IIS serves equally well as an intranet Web Server or as a public Web Server program, and thus it is popular for both public sites and corporate intent sites. A robust and capable Web Server program, IIS is suitable for any size site. Small sites running personal Web pages use IIS, as do of the largest electronic commerce sites on the Web.

IIS includes an integrated search engine that allow users to create customized search forms with a variety of tools, including ASP, ActiveX Data Objects, and SQL database queries. IIS also includes Microsoft's FrontPage HTML deve opment tool and other reporting tools. IIS supports FTP, allowing users to download files and data from the IIS Server site using the FTP protocol.

2.3.9.2 APPLICATION SERVER

Application server connect database information(usually coming from a database server) and the end user or client program(often running in a web browser).Application server have different roles and not every company requires the same functionality. Scalability is one of the good example. Some companies might want the server that helps them organize their application for the web, give them better control and make it easier to monitor and secure the data. Big companies scalability of an application server is crucial as they need to manage thousands of server.

2.3.9.3 FIREWALL

A firewall is a set of related program, located at a network gateway server that protects the resources of a private network from users from other networks. A firewall is often installed in a specially designated computer separate from the rest of the network so that no incoming request can get directly at private network resources.

2.3.10 DATABASE

Database is a shared collection of logically related data, designed to meet the information needs of an organization.

- **MS-Access 2000**

MS-Access 2000 runs under the Windows 95/98/2000/NT operating systems and it is one of the programs in the MS-Office. MS-Access 2000 has powerful tools for managing data for example enabling of database among co-workers over the Internet, searching and retrieving the information quickly. It takes advantage of automated, pre-packaged solutions to quickly create databases. MS- Access 2000 also has features that can be used to convert data between Microsoft access and your favorite spread sheet, database or statistical packages beside that, data in MS-access can be migrated to ms-SQL Server. Ms-Access 2000 offers many features which include conditional formatting, drag and drop functions to MS-Excel, integration of shared components, include to support and other more.

- **MS-SQL Server 2000**

SQL server 2000 provides agility to data management and analysis. From a data management and analysis perspective, it is critical to turn raw data into business intelligence and take full advantage of the opportunities presented by the Web. A complete database and data analysis, SQL Server 2000 lead to the rapid development of a new generation of enterprise-class business application. It is a fully Web-enabled database product, providing core support for Extensible Markup Language (XML) and the ability to query across the Internet and beyond the firewall.

2.3.10.1 ENTITY- RELATIONSHIP MODEL

Many-to-Many Relationship

A many to many relationship cannot be directly represented in a data model.There is a need to create a third entity to map an m:m relationship sometimes called an intersection (or bridge) entity. In many-to-many relationships a record in the main table can have many matching records in the secondary table, and a record in the secondary table can have many matching records in the main table. For example, if the first table contains lecturers and the second table contains course. One lecturer may teach many course and one course may be thought by many lecturers. It is necessary to create a third table, a junction table, which contains the details of each order.

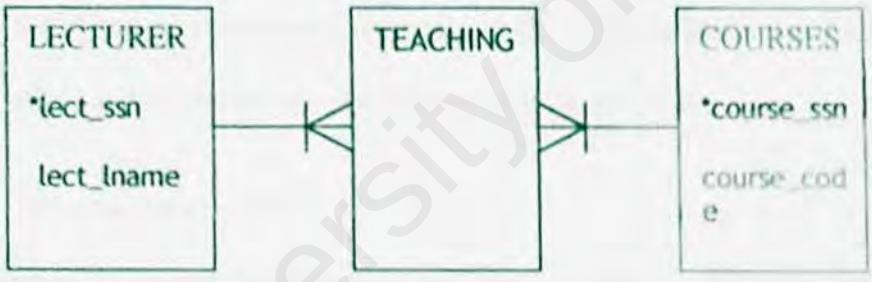

Figure 2.3 Example of the many to many database

2.3.11 DOCUMENTATION

- **MS-Word 2000**

Microsoft Word is currently the application of choice for creating print documents. Microsoft Word 2000 was designed to be the easiest way to create

common Web, e-mail and print documents around the world. Word 2000 embraces HTML as a first-class file format and extends Word's industry-leading ease of use to the Web and e-mail. Word 2000 also extends that ease of use to international users, making it easy to create multilingual documents.

Advantages:

- Create content for the Web. Create compelling, graphically rich Web pages using Themes and HTML functionality in Word 2000.
- Share information easily. HTML is a companion file format in Word, meaning users can save their documents to HTML with high fidelity
- Reduce downtime. Keep documents safe. Self-repairing functionality in Word searches for missing or corrupted files and repairs them automatically, while anti-virus scanners check every new file you open.

- **MS-PowerPoint 2000**

Microsoft® PowerPoint® 2000 makes it easy to organize, illustrate, and deliver your ideas professionally. It is used for conducting a meeting, presenting to an audience and delivering your message over the Internet

Advantages:

- Make learning easier Office Assistant guides you through common tasks and lets you ask questions in your own words.

- Powerful -it easy to add new slides, edit text, and enter notes all from one window.

2.4 SUMMARY ONF LITERATURE

Research and findings from various type of source helped us to a get better picture on how to develop a better Online Feedback system and to choose the right software . Many important ides and thoughts from the previous findings which helped us gain some knowledge on existing Online Feedback system .

The advantages of the existing Online Feedback system help me to identify what are the important features that I need to include in order to build the system. The disadvantage of the existing system is that users are not allowed to view any of the page without logging-into the system. What they can see is just the log-in page. An online feedback system should have a button where at least the user can click to view the home page or the example of the questionnaire page.

As a summary the literature review help me to understand and build a better Online feedback system and design a good user interface.

2.5 RELATIONSHIP TO PROPOSED PROJECT

By exploring a number of various online feedback web sites that are currently available, information and knowledge on the existing system can be gained. All advantages and goal points of these web sites will be incorporated into the development of the proposed system after some consideration about the feasibility. At the same time, the disadvantages that was found from these current web sites will be avoided as much as possible. A better selection in choosing programming tools, server, database, or other related aspects can be made. For example ASP will be used in my system because of the features provided. Besides that Active Server Pages give us the ability to deliver not only HTML but also client-side scripting, web control, and server-side processing and connectivity features.

CHAPTER 3:METHODOLOGY

3.1 PROJECT OBJECTIVES

This system is based on developing an Online Feedback System for Faculty of Computer Science and Information Technology, University Malaya. The FSKTM current system demands a manual effort, where a student or lecturers have to distribute the feedback forms in class, and students have to complete the form at that particular time and submit it back to the university which is very time consuming. Besides that those who are absent won't be able to give their feed back. The objective of this online feedback system is

- To develop a secured system where only authorized personnel can access.
- To develop a system where the system allows an administrator to create and to reuse and edit old ones .
- To develop a system where lecturers may view all results by instructors and courses.
- To generate report on student's feedback instantly and accurately
- To develop a system where lecturers may print the report by instructors or courses.
- To develop a system that enables the students to take this survey from any remote location that has an Internet connection and a current internet browser.
- To develop a system that allows the users to take this survey at any time.

- To develop a system to inform faculty and administration how the students feel about the course, how they like the facilities provided by the university and also to evaluate how effective a lecturer's teaching is
- To develop a system where the student can submit the feedback on-line.

3.2 DEVELOPMENT METHODOLOGY

The waterfall model with prototyping has been chosen as the system process model. Figure 3.1 below shows the waterfall model with prototyping.

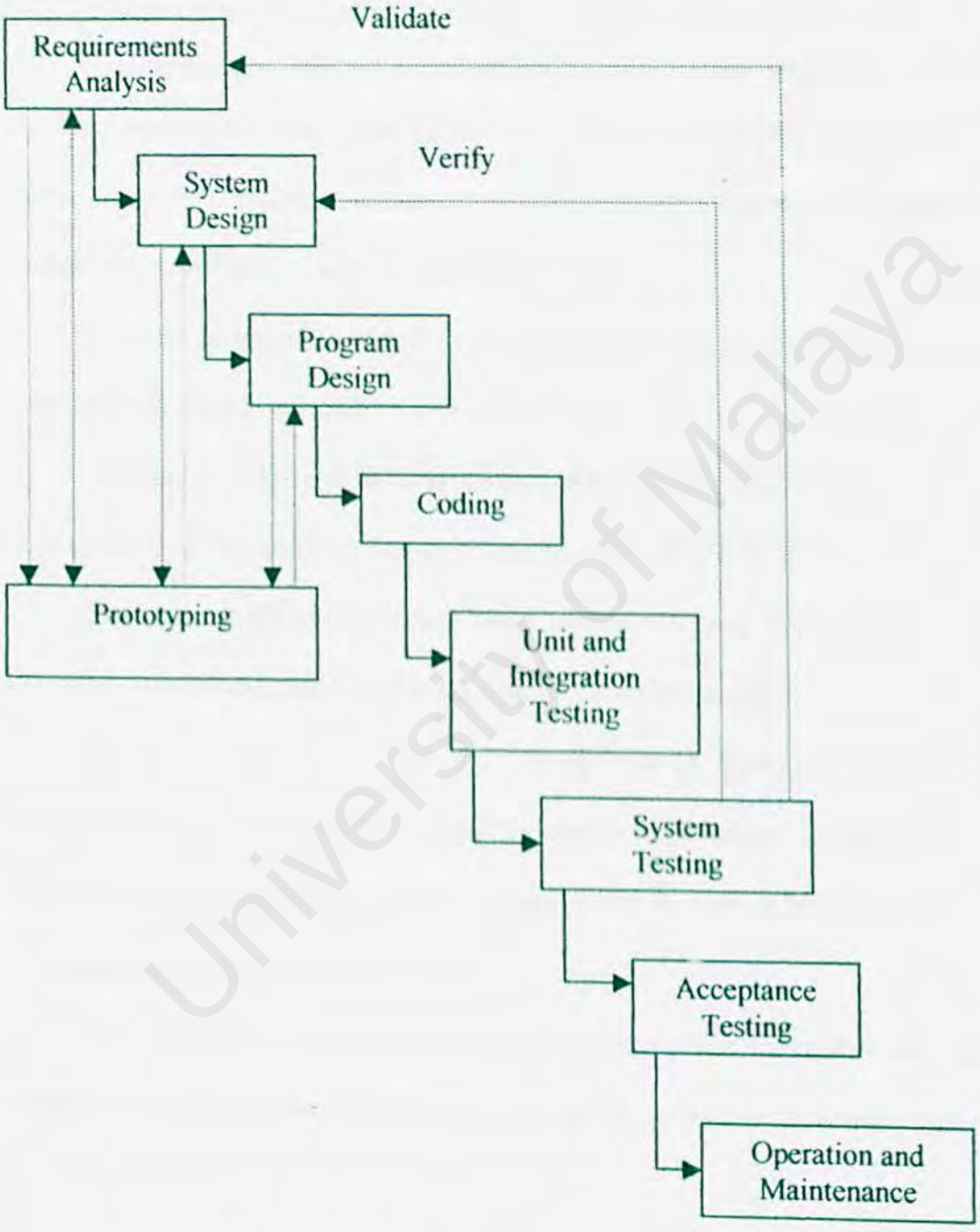

Figure 3.1: Waterfall model with Prototyping

This system process model contains 8 phases, which are the requirement analysis, system design, program design, coding, unit and integration testing, system testing, acceptance testing and operation and maintenance.

The first phase in this methodology is requirement analysis. This is the phase which requires information gathering where researchers and surveys are done.

System design is the creative process of transforming the problem into solution. The description of solution is also called design. After defining the requirement, a system design will be created to meet the requirements. The system design will describe the whole system features, function and interactions.

Program design is the overall system design which is use to generate the designs of the individual programs and the system modules without any integration.

The coding phase will build up all programs by using selected programming languages and application development tools according to the design.

The unit and integration-testing phase ensures that each module behave according to the specification defined during program design phase.

System testing involves a test of the whole system to make sure that the functions and interfaces specified initially have been implemented accordingly. Whereas the acceptance testing phase is to ensure that the system built meet the requirements and the project objectives.

The last phase is the operation and maintenance phase where after the system is accepted, it will be delivered and if anything goes wrong maintenance will be provided.

The Waterfall model with prototyping is chosen because it is very useful in helping developers lay out what they need to do and developers also can gauge how close the project is to completion at a given point in time.

The prototyping in the waterfall model helps user examine some aspect of the proposed system and to decide whether it is suitable for the product. The prototyping is based on the premise that users do not know exactly what they want until they actually have a chance to see and work with the system.

There are two approaches to prototyping, evolutionary and throwaway. A throwaway prototype is exploratory and it is not intended to be used as an actual part of the delivered software. On the other hand, an evolutionary prototype is developed to learn about problem and form the basis for some of the delivered software. Once the requisite knowledge is gained, the prototype is then adapted to satisfy the batter understood needs.

There are also two important activities as depicted in figure 3.1 which is validation and verification. Validation is to make sure that the developers are building the correct system and verification ensures that each function of the activity works correctly.

3.3 RATIONAL FOR PROPOSED METHODOLOGY

I intended to use the waterfall model with prototyping because this model allows customers and developers examine some aspect of the system and decide if is suitable.

Besides that, User interface often built so users understand what the new system will be like. There are some characteristics and advantages gained by using the model.

- It is very useful in helping developers lay out what need to be done.
- Its simplicity makes it easy to explain to others who are not familiar with software development.
- It makes explicitly which intermediate products are necessary in order to begin the next stage of development.
- It presents a very high-level view of what is going on during development, and it suggests the sequence of events a developer should expect to encounter
- Prototyping helps to reduce cost by discovering the problems of consistency and feasibility of the system at the earlier stage rather at the most costly stage.
- Discourages jumping ahead
- Emphasizes planning and good requirements
- Testing and verification central
- Measurable objectives

3. 4 REQUIREMENT ANALYSIS

Requirement analysis is a very important phase in ensuring success of a system. This is because the acceptability of the system after it has been developed all depends on how well it meets the users need, and how well it supports the work to be automated. The system will not meet the expectation if a system analyst does not realize the user

requirement for the system. The analysis from literature review will help to determine a set of system requirements for the online feedback system.

The process of determining the requirements for the system begin with the information and system related materials collecting. Figure 3.2 below shows the steps of the requirement analysis.

Figure 3.2: Process of determining system requirements

- Information Gathering

Information collected through search engines such as Google, Yahoo, Alta Vista, Metacrawler and others.

- Information analysis

Analyze collected information or materials and identify functions that provided by other related systems.

- Requirement Identification

The requirement of the system should be identified by using the knowledge gained from the earlier analysis.

- System Requirements

A set of system requirements that have been identified which includes functional and non-functional requirement, will be used throughout the development of the system.

3.4.1 FUNCTONAL REQUIREMENTS

Functional requirements describe an interaction between the system and its environment. It can be categorized into three sections which are

-Administrator module

-Lecturer module

-Student module

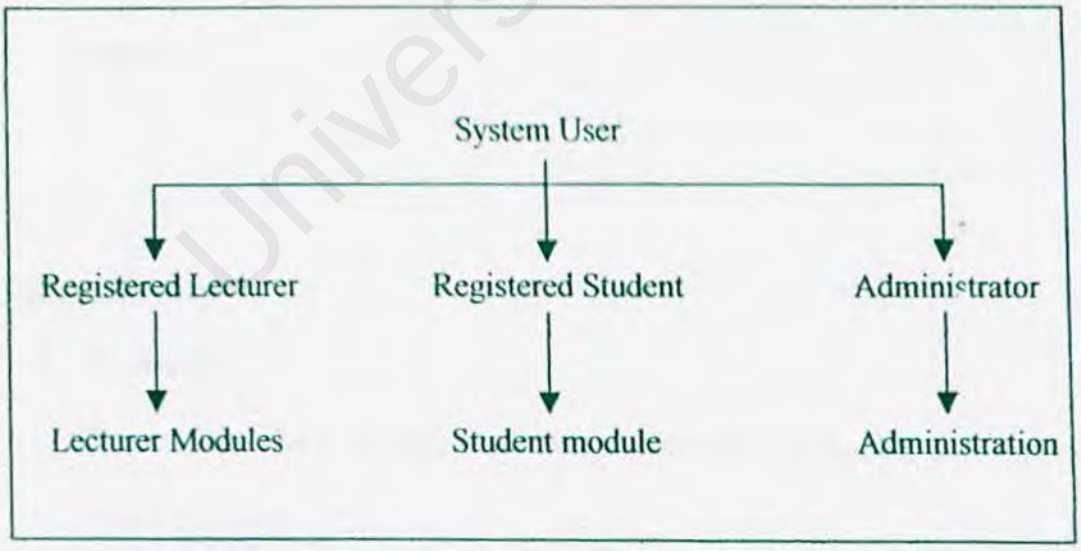

Figure 3.3: Types of system Users

3.4.1.1 TYPES OF MODULES

Administrator module

- **Admin Login**

  Admin login to the system using username and password

- **Question Module**

  This module is used by the administrator to add, delete and edit questions from the database.

- **Keep track of the student's information.**

  Administrator can add new students to the database and also have the authority to edit or change any student's information and also delete students from the database.

- **Keep track of the lecturer's information**

  Administrator can add new lecturers to the database and also have the authority to edit or change any lecturer's information and also delete lecturers from the database.

Lecturer Module

- **Registration Module**

  This module allows new lecturer to register so that they can log-in to this system

- **Lecturer Login**

  Lecturer login to the system using username and password

- **Feedback Module**

  Allows the lecturers to view and print the report according to course and instructors name.

Student Module

- **Registration Module**

  This module allows new student to register so that they can log-in to this system

- **Login**

  Student login to the system using username and password

- **Feedback module**

  Enables student to give their feedback by course code and instructor.

3.4.2 NON FUNCTIONAL REQUIREMENTS

Non-functional requirements are essential definition of system properties and constrain under which a system must operate. Although these requirements are very subjective, they are still very important to ensure the success of the system.

- Reliability

  Application system reliability is important to ensure that the software and hardware do not cause unnecessary failure or downtime when they are used in a proper manner.

- Response Time

The response time should be in reasonable interval in retrieving any data or information. Good application system will have shorter response time.

- User-friendly

  System should have a user-friendly interface so that it is easy to use and understand.

- Usability

  This system can be used conveniently

- Security

  The system should be able to prevent unauthorized users access to the system

- Availability

  All the system data and applications should be ready in use at all time.

- Manageability

  The application system, hardware and software should be able to be manage and operated easily

- Robustness

  The system should be able to handle or at least avoid disaster in the face of unexpected circumstances such as input of improper data.

3.5 FEASIBILITY STUDIES

The feasibility of the system is important to ensure that the system can be built with available sources and technology to perform how it is supposed to:

- Operational Feasibility

The proposed system will be completed within the period of time as expected. The system can be used after it is developed and pass several testing processes. The system will meet the requirement by allowing the students to give feedback, lecturers to view and print report and administrator to add, delete, edit information on users and also questions.

- Technical Feasibility

The proposed system is feasible for the technical aspect since no sophisticated or extra powerful technical support is needed to implement the system. System can be build by developers who have knowledge in programming, software engineering and networking.

3.6 SYSTEM REQUIREMENTS

3.6.1 SYSTEM DEVELOPER REQUIREMENTS

Hardware:

Table3.1 System Developer Hardware Requirements

Processor	450Mhz or above
RAM	Minimum 128 Mb
Hard Disk	10GB or above

Software:

Table 3.2: System Developer Software Requirements

Operating System	Microsoft Windows 2000 professional
User Interface designing	Macromedia Dreamweaver MX
Database Management System	Microsoft Access
Server-side Scripting	ASP(Active Server Pages)
Client-side Scripting	VBScript, JavaScript
Web Server Software	IIS (Internet Information Server)
Web Application Language	HTML (Hypertext Markup Language)
Web Browser	Internet Explorer 5.0 or above Netscape Communicator 5.0 or above
Documentation & Scheduling	Microsoft Word 2000

3.6.2 SYSTEM USERS REQUIREMENTS

Hardware:

Table3.3:System Users Hardware Requirements

Computer Processor	At least 166 MHz
Memory	At least 32 MB memory
Dial up connection	Network connection through existing network configuration or modem

Software:

Operating System	Microsoft Windows 98,2000, ME
Browser	Internet Explorer 5.0 or above Netscape Communicator 5.0 or above

Table 3.4: System users software Requirements

3.7 SYSTEM DESIGN

System design build on the knowledge obtained from analysis phase, it uses the requirements to design a system that will meet the users needs. The phase involves explanation about the whole system that is going to be developed and the expected system performance. In this phase, all of the system properties such as system architecture, database design, process design and interface design are being explained.

This phase is being explained in details in Chapter 4 (System Design)

CHAPTER 4:SYSTEM DESIGN

4.1 INTRODUCTION

System design build on the knowledge obtained from analysis phase, it uses the requirements to design a system that will meet the users needs. The phase involves explanation about the whole system that is going to be developed and the expected system performance. In this phase, all of the system properties such as system architecture, database design, process design and interface design are being explained. The design will also specify how the various functions will be integrated as well as the input/output design and interface design.

4.2 DATABASE DESIGN

Database design is the processes of creating a design for the database that will support systems operations and objectives. The major aims for the database design are to:

- Provide a data model that supports any transaction required on the data.
- Represent the data and the relationship between data required by all major application areas and user groups.

4.2.1 DATA DICTIONARY

The fully attributes of entity are identified and listed in the table below. It helps to identify the definition of data in the system.

➢ Table: STUDENT

Description: This is the table for storing the particulars of a student who will be using this system to give feedback.

Field Name	Description	Data Type	Field Size
STUDENT_ID	User Name	CHAR	10
NAME	Student Name	CHAR	20
MATRIX NUMBER	Student Number	CHAR	10
GENDER	Gender of Student	CHAR	10
ICNUMBER	Student Identification	CHAR	10
TELNUMBER	Student contact number	CHAR	10
EMAIL	E-mail of Student	CHAR	10
DEPARTMENT	Student Department	CHAR	10
YEAR	Student Intake	CHAR	8
SEMESTER	Student semester	CHAR	8
PASSWORD	Password for student	CHAR	8

Table 4.1 Data structure of Student

➢ Table: LECTURER

Descripton: This is the table for storing the particulars of a lecturer who will be using this system to view feedback

Field Name	Description	Data Type	Field Size
Lecture ID	User ID	CHAR	10

NAME	Lecturer Name	CHAR	20
GENDER	Gender of Lecturer	CHAR	10
ICNUMBER	Lecturer Identification	CHAR	10
TELNUMBER	Lecturer contact number	CHAR	10
EMAIL	E-mail of Lecturer	CHAR	10
DEPARTMENT	Lecturer Department	CHAR	10
PASSWORD	Password for Lecturer	CHAR	8

Table 4.2 Data structure of Lecturer

- Table: ADMIN LOGIN

Description: This is the table for storing the particulars of an admin who will be administrating this system

Field Name	Description	Data Type	Field Size
ADMIN ID	User ID	CHAR	10
ADMIN PASSWORD	Password for Admin	CHAR	20

Table 4.3 Data structure of Administrator

4.3 APPLICATION DESIGN

Application Design is the design of the user interface and the application programs that use and process the database. All functionality stated in the users requirement specification must be ensured present in the application design for the

database application. This involves designing the application program that access the database and transaction design, which is the design of the database access methods.

4.3.1 TRANSACTION DESIGN

Transaction is an action or series, carried out by a single user of application program, which accesses or changes the content of the database. The objective is to define and document the high level characteristics of the transaction required on the database system.

4.3.2 STRUCTURE CHART

The online feedback question consists of three sections that are Lecturer section, Student section and the Administrator section.

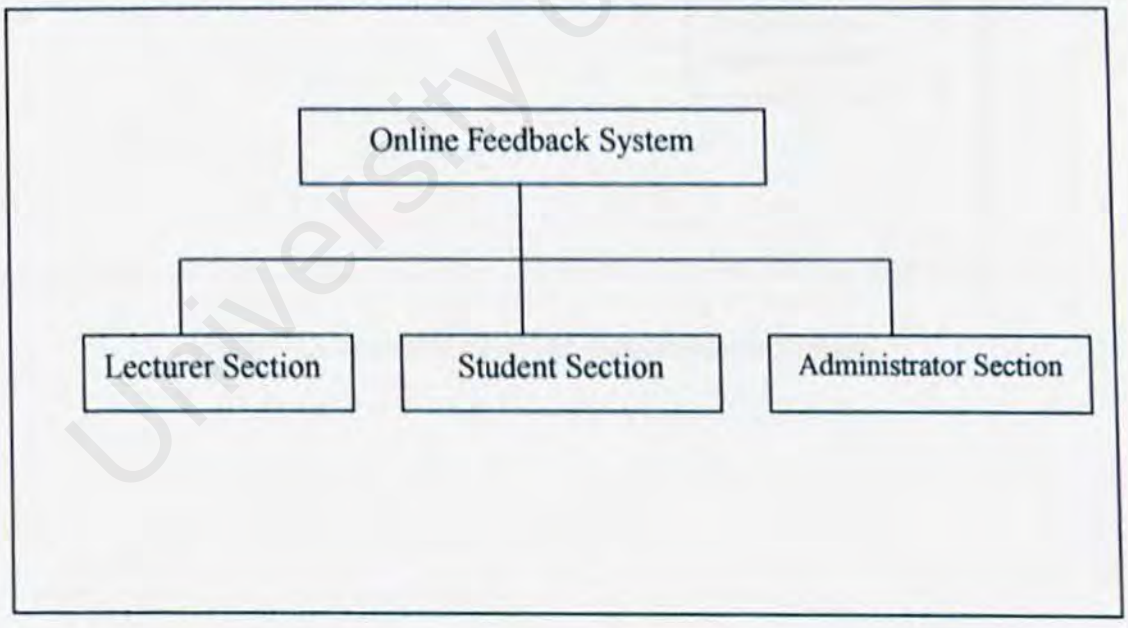

Figure 4.1:Structure chart for main System

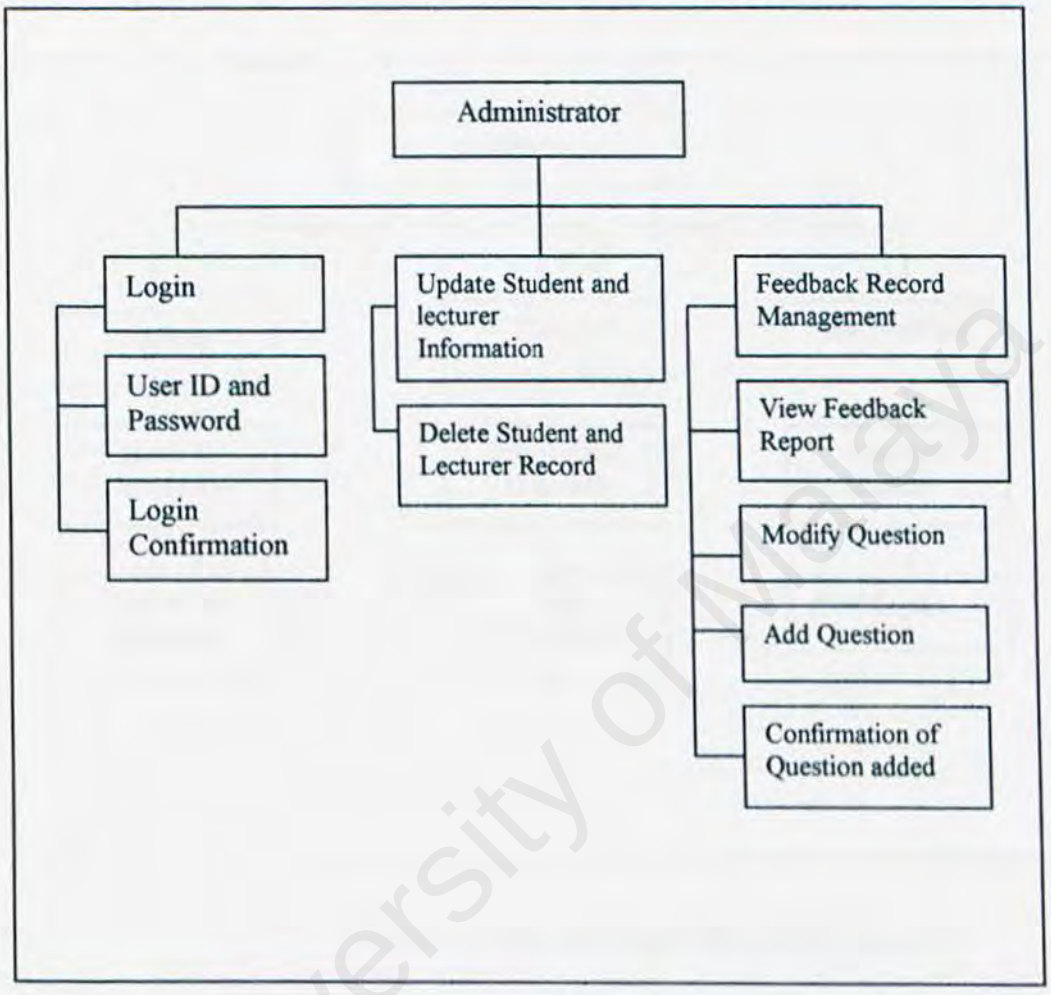

Figure 4.2 Structure chart for Administrator Section

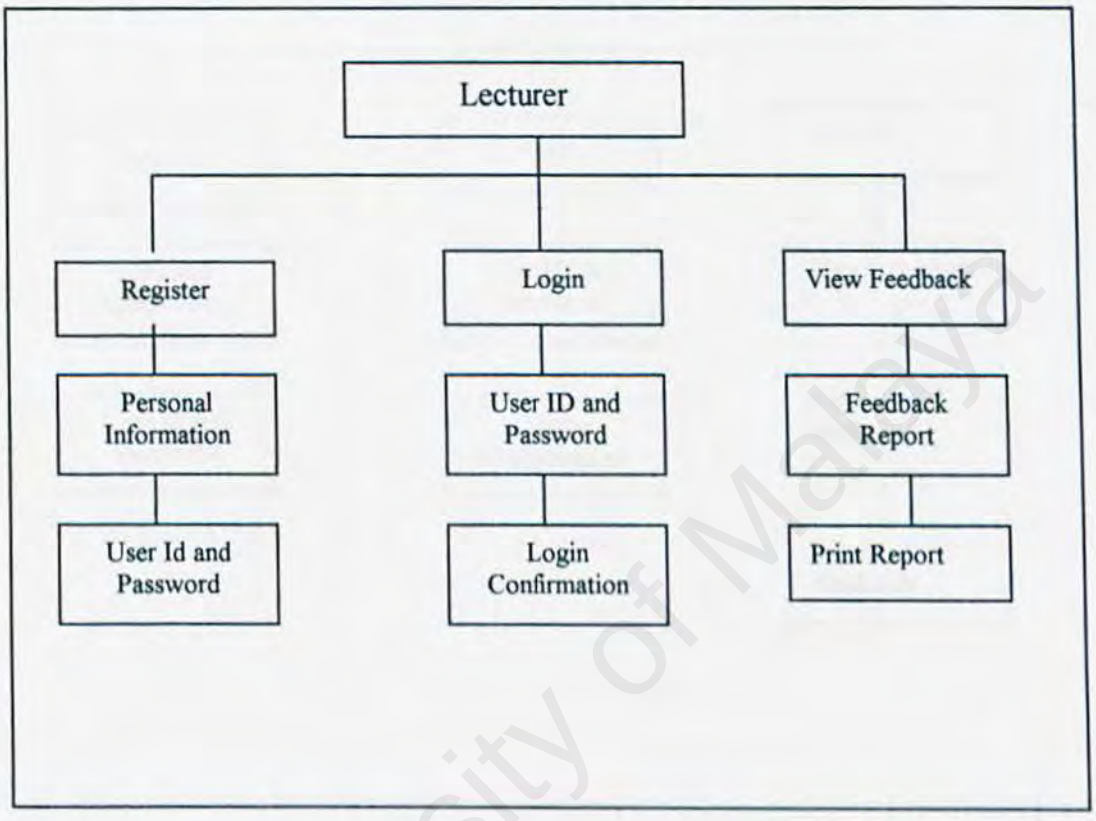

Figure 4.3 Structure chart for Lecturer Section

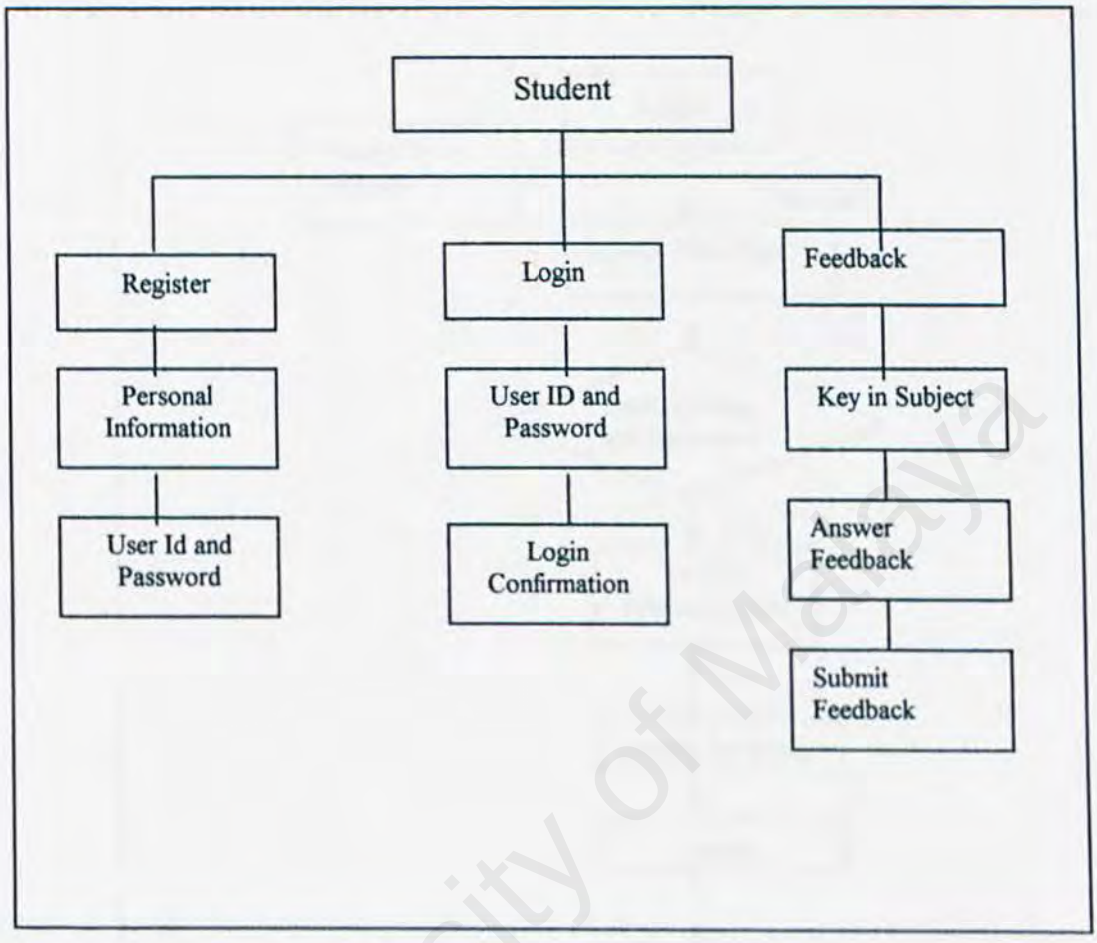

Figure 4.4 Structure Chart for Student section

4.3.3 FLOW CHART

Flow chart is used to depict the workflow for system

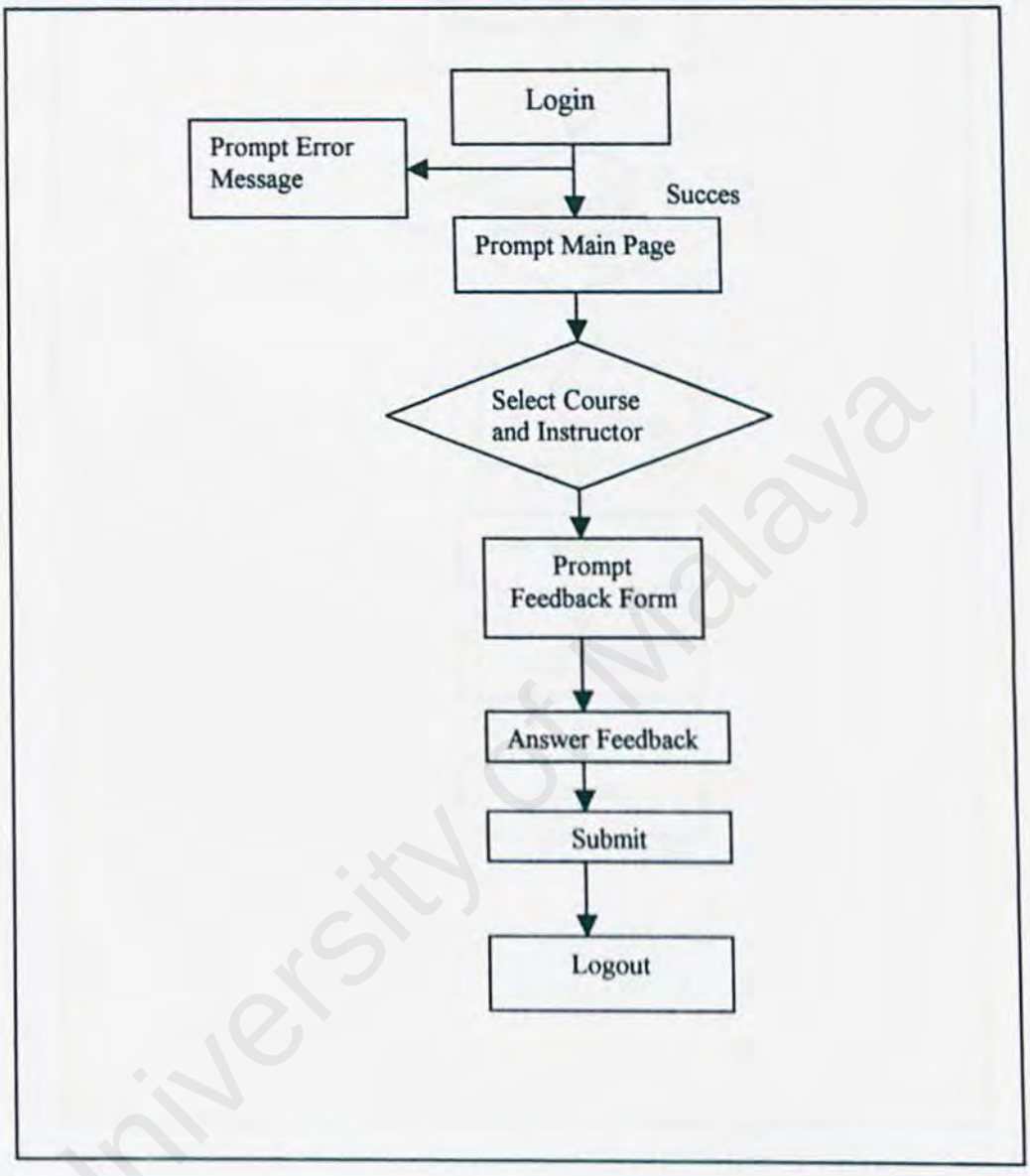

Figure 4.5.Flow Chart for Student Login Module

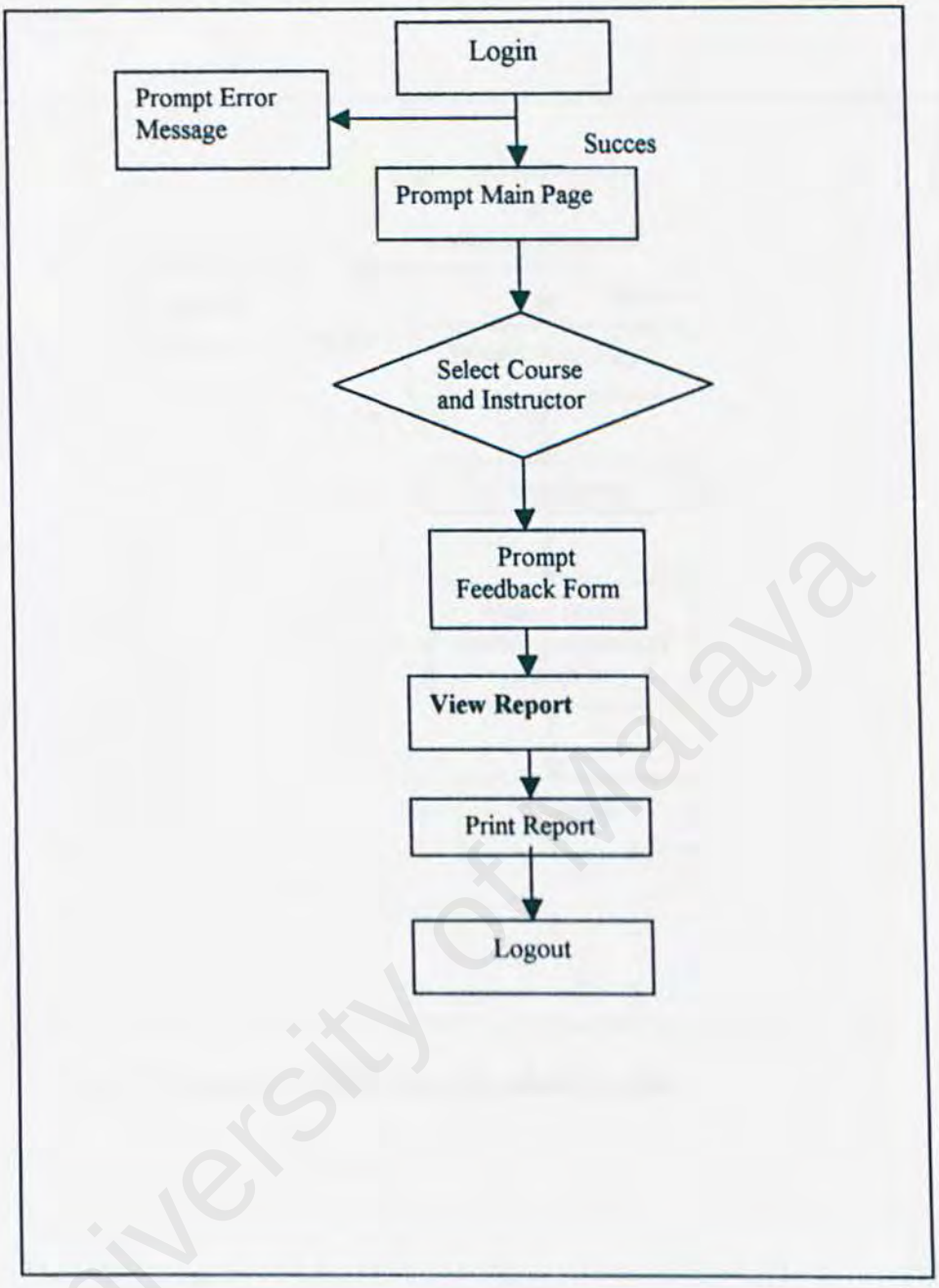

Figure 4.6.Flow Chart For Lecturer Login Module

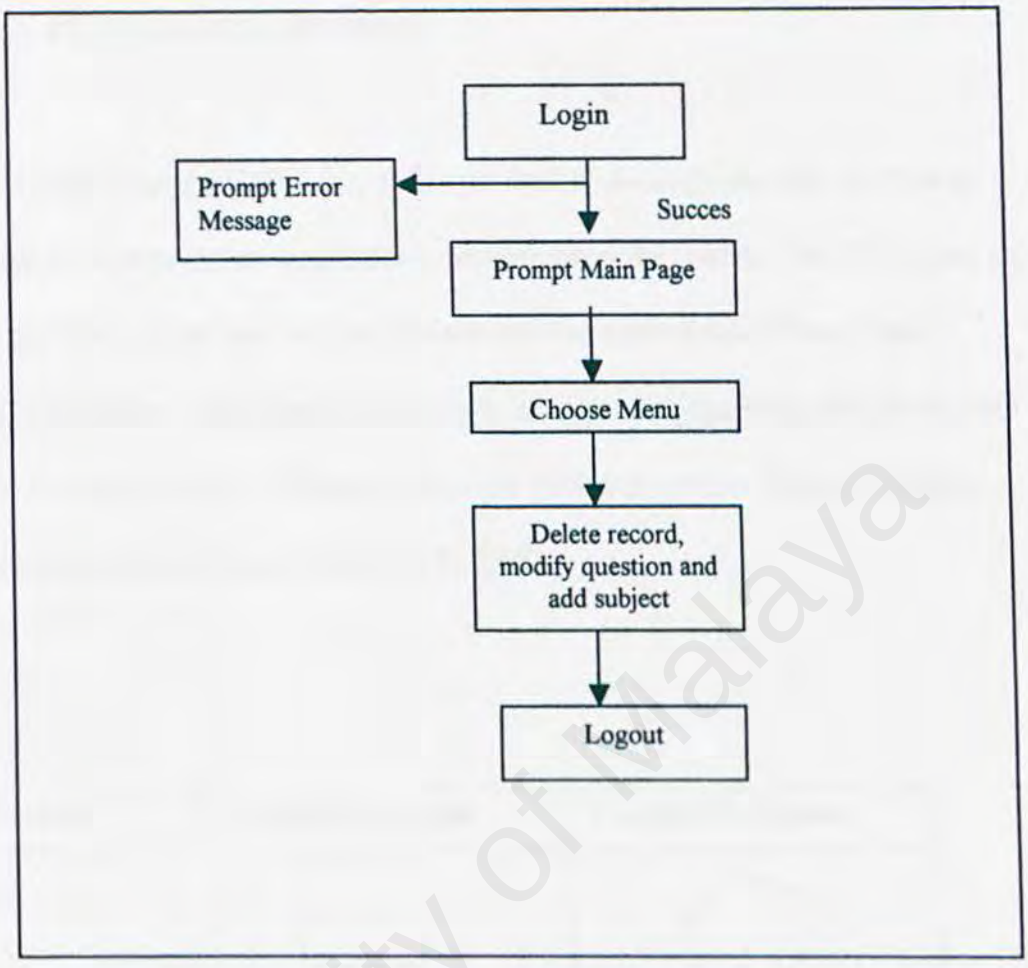

Figure 4.7 Flow chart for admin Login

4.3.4 DATA FLOW DIAGRAMS (DFD)

A Data Flow Diagram (DFD) is a technique used to show graphically the flow of data through a business system and process performed by the system. The DFD gives an overview of system inputs and outputs, process and the flow of data through each process. DFD is drawn using four basic symbols to represent processes, data flows, data stores, and external entities. Different authors use different symbol. Figure 4.8 shows two of the most commonly used notations for DFDs.

Symbol Name	Gane and Sarson	Yourdon/DeMarco
Process		
Data flow		
Data store		
Entity		

Figure 4.8:Gane & Sarson and Yourdon/DeMarco notations and example

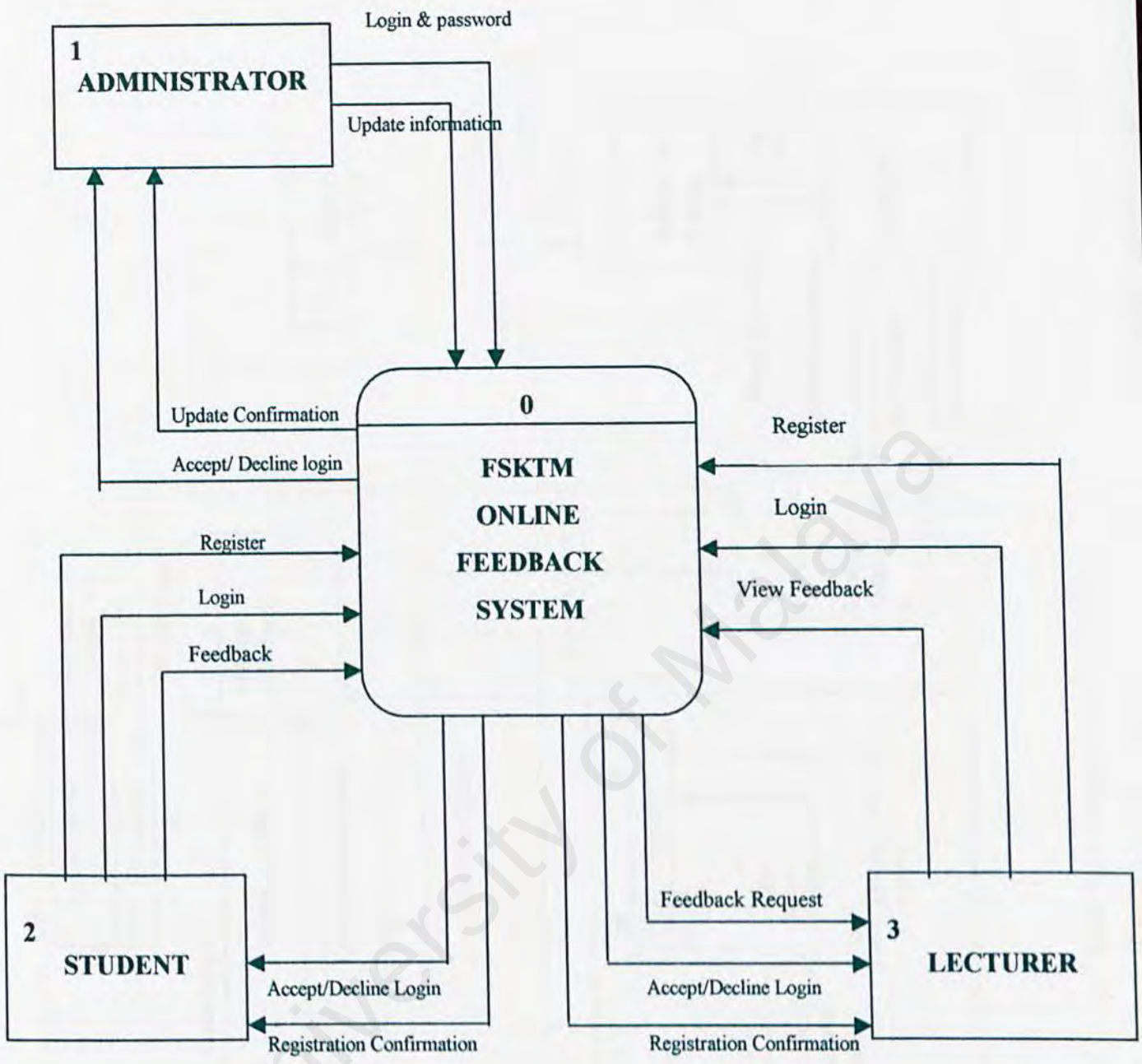

Figure 4.9 Context Diagram for FSKTM online feedback system

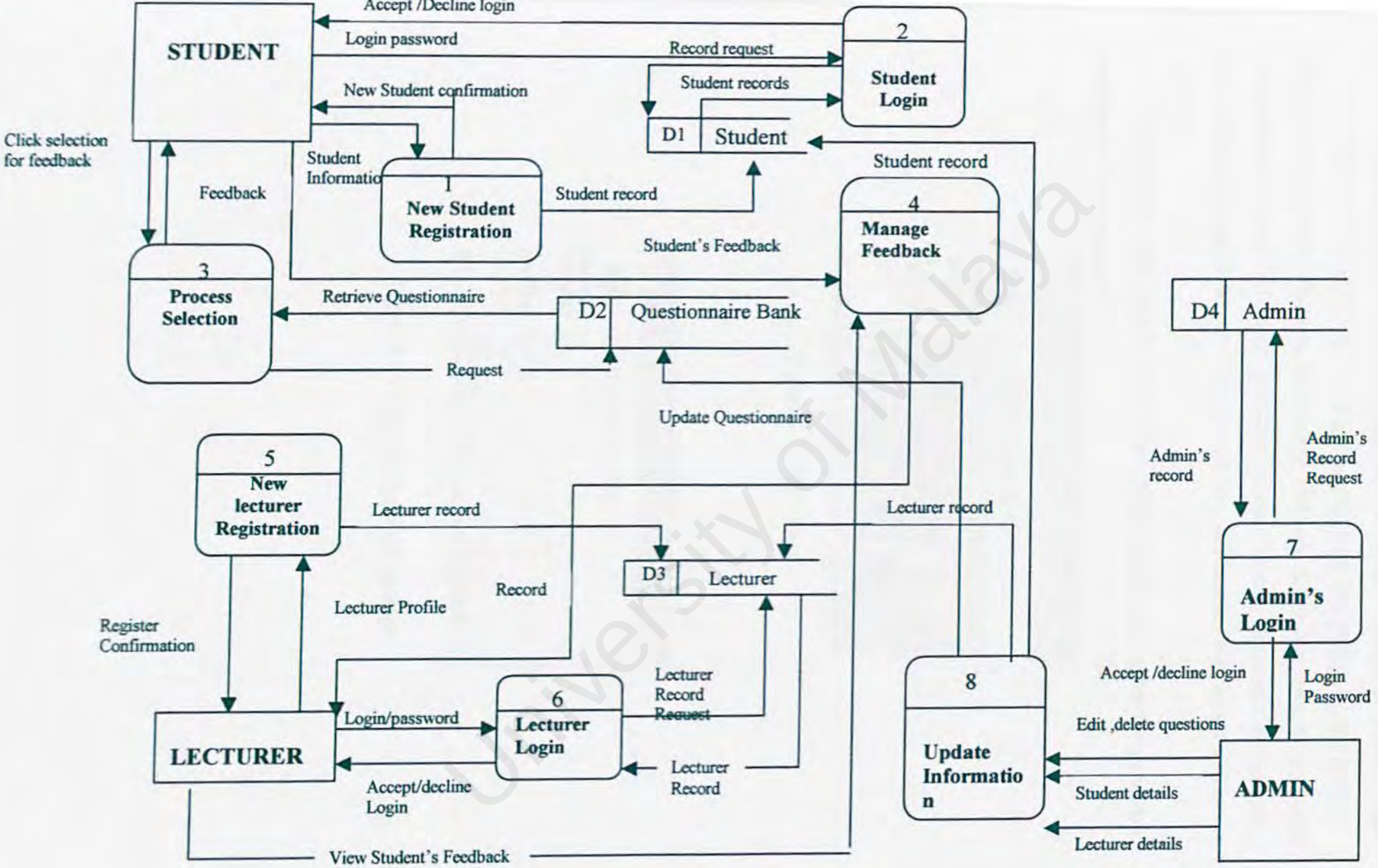

Figure 4.10: Data Flow Diagram (DFD) Level 0

4.4 USER INTERFACE DESIGN

The user interface is the front-end of the software. A software interface is the part of an application that the users sees and interact with. It is related to, but not the same as, the underlying structure, architecture, and code that makes the software works. The interface includes the screens, windows, controls, menus, metaphors, online help, documentation and training. Anything the uses sees and interact with is part of the interface.

Well-designed interfaces reduce errors, training time, cost and at the same time make people more productive

Figure 4.11 Main Page

Figure 4.12 Lecturer Registration Page

Figure 4.13 Admin Login Page.

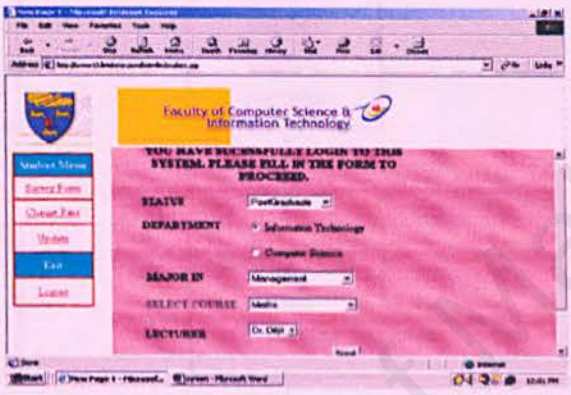

Figure 4.14 Feedback Page

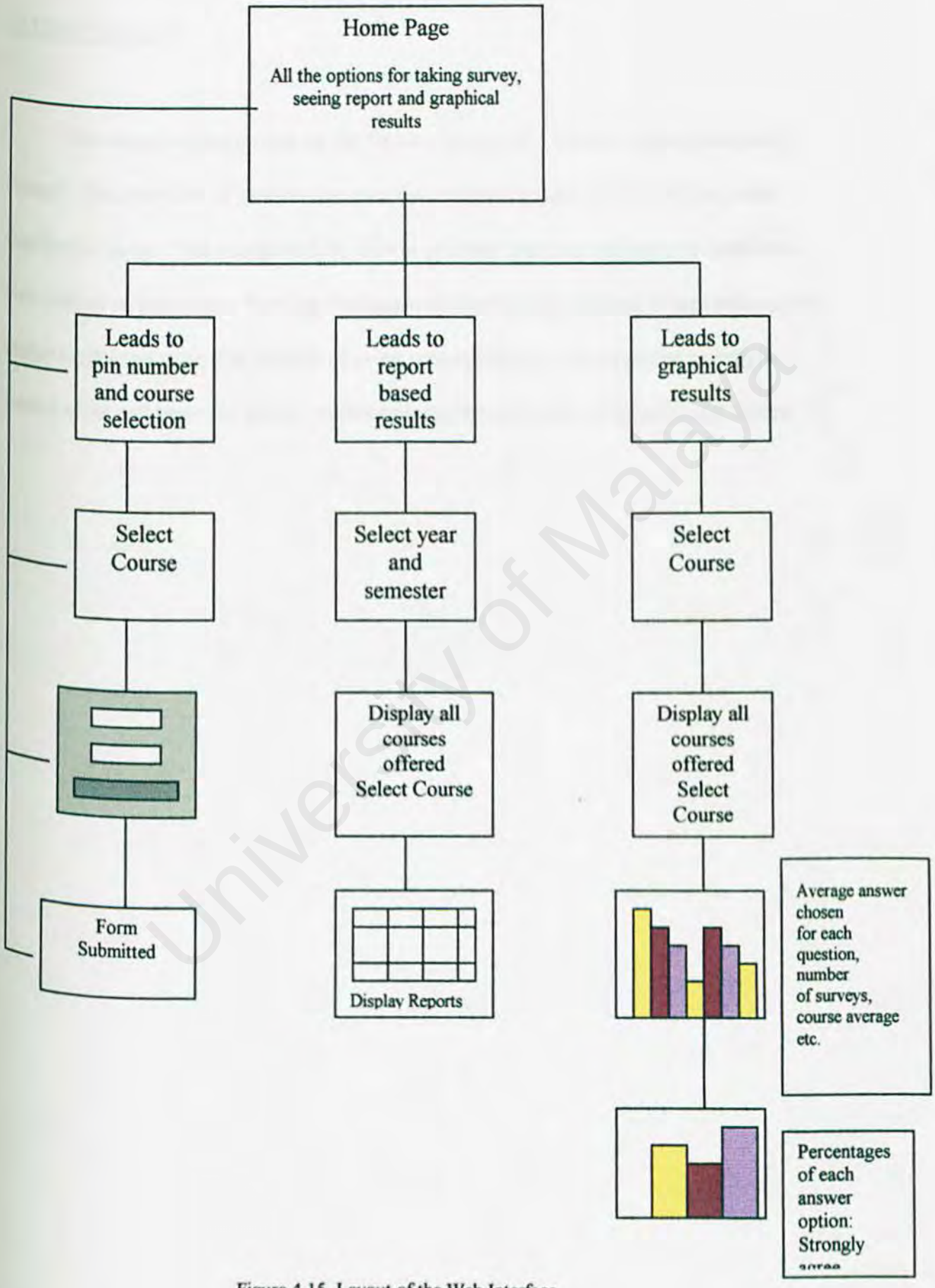

Figure 4.15. Layout of the Web Interface

4.5 CONCLUSION

This chapter concentrates on the System Design of " Student Online Feedback System". The overview of this package system architecture and interface design was described in detail. This design will be able to give the user and developer in detail or a clear picture of the system. Various changes were made to the original design because of design implementation. The benefit of using prototyping as a development paradigm made it clear and was very helpful in determining the weakness of the previous design.

CHAPTER 5: SYSTEM IMPLEMENTATION

5.1 INTRODUCTION

System implementation is a process that carries out the suggested procedures so that complete system will be produced at the end of it. System Implementation does this by converting the system requirements and design into program codes. It involves coding steps that translates a detail design representation of software into a program language realization. Two-tier client server architecture was adapted for the implementation of this system. The section that follows discusses the system development tools and its implementation.

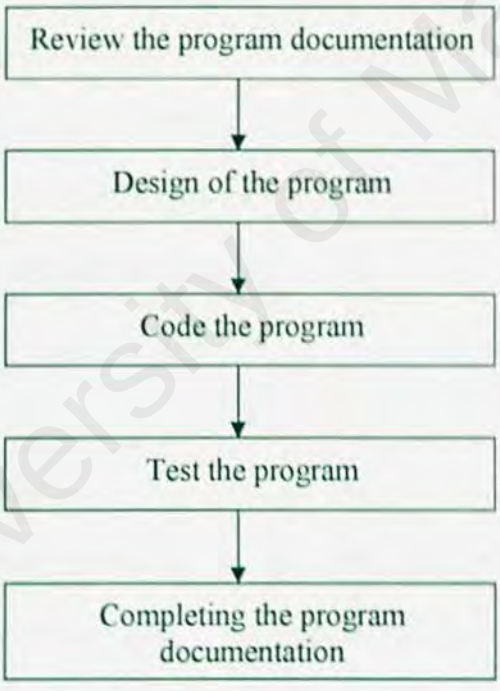

Figure 5.1 System Implementation

5.2 DEVELOPMENT ENVIROMENT

Development environment has certain impact on the development of a system. Using the suitable hardware and software not only help to speed up the system development but also to determine the success of the project.

5.2.1 HARDWARE REQUIREMENT

The following are the hardware requirements for this system:

- Running on Windows 2000 Professional
- Microsoft Access
- Internet Information Services 5.0
- Minimum of 32MB RAM
- At least 733MHz Pentium Processor
- Other standard PC components

5.2.2 SOFTWARE TOOLS

In the development of SOFS, the software development applied basically consisted of components and tools. The components includes of the technology used to support the functionality of the system. Whereas, the tools applied are those development applications used to design and develop. The following are the tools that were used to develop this system.

Software	Description
Microsoft Windows 2000 Professional	Operating system
Internet Information Services	Application coding
Active Server Pages	Program coding
Ms Access 2000	Database Implementation
Macromedia Dreamweaver	Interface Design
FrontPage 2000	Interface Design

Table 5.1 Tools for System Development

5.2.2.1 Operating System

This SOFS system is developed in Microsoft Windows 2000 Professional.

5.2.2.2 Application Coding

Microsoft Internet Information Services is used to develop this system. It maps local directory to virtual directory and it also creates local website.

5.2.2.3 Program Coding

ASP is used in the development of this system. ASP is the perfect tool for any HTML editor to add to their toolkit, because its gives the power and flexibility to generate fresher HTML and ultimately produces more spectacular, interactive, personalized and up-to-date web pages.

5.2.2.4 Database Implementation

Microsoft Access 2000 was used to implement the SOFS database. This is because this system needs a big or large amount of information storage and this can be provided by Microsoft Access.

5.2.2.5 Interface Design

Macromedia Dreamweaver was used to create interface design for the interfaces in Student Feedback System. The compelling functions in Macromedia is user-friendly. Moreover, it also eases the task of editing the web page interface design.

5.3 INSTALLATIONS AND SETUP

Installation of the development tools is the very first step before starting any development work. It is necessary to know the sequence of products installation to ensure smooth execution without system errors.

Sequence of installation process:

1. Windows 2000 Professional
2. Macromedia Dreamweaver
3. Microsoft Office 2000
4. Microsoft Access 2000

5.3.1 CREATING VIRTUAL DIRECTORY

Internet Information Services 5.0 provides a feature that allows web content to be organized, by using virtual directory. All the ASP files and other relevant files, have to be stored in a directory that is mapped to the server. The following are the steps to create virtual directory.

1. Open Administrative Tools, click on Internet Service Manager then open Internet Information Services (IIS).
2. From IIS, click on default website, then right click to open new virtual directory.
3. Enter a name to describe the directory, in this case SOFS.
4. Finally, specify the access permissions for the virtual directory to browse.

5.3.2 OBJECT CODING

For the objects, only those which are essential and vital to the project's smoothness were chosen and explained as detailed as possible, as not all components in the system can be explained in full detail in this concise report. Some of the codes will be appended to Appendix A.

By default, VBScript is the chosen language for scripting ASP objects. But it is perfectly legal to mix languages, as long as they are properly specified for each section of code in the application's page (web page).

There are three unique ways to indicate that blocks of scripts are to be executed on the server(that is the server side code). One method is to surround the scripts with the <% and %> tags. In this case, any text between these tags is treated

as server side scripting commands, based on the language defined at the beginning of the Active Server Pages.

There are several useful built-in server objects provided by ASP that will help the application read requests from HTML forms, post results to the web browser, control the server and etc. It is easy to include these server side objects within the ASP scripts and there is no need to declare them and initialize them.

5.3.2.1 Data Connection

As for the first step in adding or retrieving data from the database, a connection between the web server and database must be established.

Admin Login

```
<%@ Language=VBScript %>
<!--#INCLUDE file="include/odbc.inc" -->
<%
NamaLogin = trim(Request.form ("userid"))
Katalaluan = trim(Request.form ("password"))

set rs= Server.CreateObject("ADODB.RecordSet")
set my_conn= Server.CreateObject("ADODB.Connection")
my_Conn.Open SourceDSN
```

```
  strSql = "Select * from AdminLogin where LoginName = '" & NamaLogin & "'
and Password='" & Katalaluan & "'"
        rs.Open StrSql, my_conn, 2, 3

        if rs.EOF or rs.BOF then
                response.write ("<font color = red size =5><b><center>")
                response.write( "Please enter the correct user id or password." )
                response.write("</center></b></font>")%>

<head>
        <meta http-equiv=Content-Type content="text/html; charset=iso-8859-
1"><meta http-equiv=refresh content="2;URL=adminlogin.asp">

        <% Else
                session("Login") = NamaLogin %>
<script>window.open("admin.asp","_parent")
</script>
<%
        end if
%>
</head>
<body background="images/Pink_and_WhiteA1B2.gif">
```

Change password.

```
<%@ Language=VBScript %>
<!--#INCLUDE file="include/odbc.inc" -->
<%
set rs= Server.CreateObject("ADODB.RecordSet")
set my_conn= Server.CreateObject("ADODB.Connection")
my_Conn.Open SourceDSN


  strSql = "Select * from lecturer where LecturerID='" & session("Login") & "'"
        rs.Open StrSql, my_conn, 2, 3
        rs("password")=        request.form("newpass")
        rs.update
        %>
<html>
<head>
<title>Untitled Document</title>
<meta http-equiv="Content-Type" content="text/html; charset=iso-8859-1">
<script language="JavaScript" type="text/JavaScript">
<!--
function MM_reloadPage(init) {  //reloads the window if Nav4 resized
 if              (init==true)              with              (navigator)              {if
((appName=="Netscape")&&(parseInt(appVersion)==4)) {
   document.MM_pgW=innerWidth;                    document.MM_pgH=innerHeight;
onresize=MM_reloadPage; }}
```

```
 else if (innerWidth!=document.MM_pgW || innerHeight!=document.MM_pgH)
location.reload();
}
MM_reloadPage(true);
//-->
</script>
</head>

<body background="image/bg2.gif">
<div id="Layer1" style="position:absolute; left:110px; top:64px; width:402px;
height:245px; z-index:1">
 <div align="center">
  <p><font color="#000000" size="5"><strong>YOUR PASSWORD HAVE
BEEN CHANGED
  SUCCESSFULLY.</strong></font></p>
  <p> </p>
 </div>
</div>
<div id="Layer2" style="position:absolute; left:242px; top:134px; width:124px;
height:136px; z-index:2"><img src="image/monkey_using_typewriter_md_wht.gif"
width="148" height="137"></div>
</body>
</html>
Update Information
<%@ Language=VBScript %>
```

```
<!--#INCLUDE file="include/odbc.inc" -->
<%
set rs=server.CreateObject("adodb.recordset")
set my_conn= Server.CreateObject("ADODB.Connection")
my_Conn.Open SourceDSN
sql="select * from Lecturer where LecturerID='" & session("Login") & "'"
rs.Open sql,my_conn, 1, 2

rs("Name")          =   Request.Form("Name")
rs("ICNumber")      =   Request.Form("ICNumber")
rs("TelNumber")     =   Request.Form("TelNumber")
rs("Email")         =   Request.Form("Email")
rs("Department")    =   Request.Form("Department")
rs.update
%>
<font color="#0000FF" size="5"><b>Your Information Have Been Update
Successfully.</b></font>
```

Update Question

```
<%@ Language=VBScript %>
<!--#INCLUDE file="include/odbc.inc" -->
<%

set rs=server.CreateObject("adodb.recordset")
set my_conn= Server.CreateObject("ADODB.Connection")
my_Conn.Open SourceDSN
sql="select * from Questions where QID=" & session("Question")
rs.Open sql,my_conn, 1, 2

rs("Question") =        Request.Form("Question")

rs.update
%>
<font color="#0000FF" size="5"><b>The Question Have Been Update
Successfully.</b></font>
```

Student Register

```
<%@ Language=VBScript %>
<!--#INCLUDE file="include/odbc.inc" -->
<%

set rs=server.CreateObject("adodb.recordset")
```

```
set my_conn= Server.CreateObject("ADODB.Connection")
my_Conn.Open SourceDSN
rs.Open "select * from Student",my_conn, 1, 2
rs.addnew
rs("Name")          =    Request.Form("Name")
rs("MatricNumber")  =    Request.Form("MatricNumber")
rs("Gender")        =    Request.Form("Gender")
rs("ICNumber")      =    Request.Form("ICNumber")
rs("TelNumber")     =    Request.Form("TelNumber")
rs("Email")         =    Request.Form("Email")
rs("Department")    =    Request.Form("Department")
rs("Year")          =    Request.Form("Year")
rs("Semester")      =    Request.Form("Semester")
rs("Password")      =    Request.Form("Password")
rs("StudentID")     =    "S" & Cstr(rs("AutoID"))
rs.update
%>
<b><font size="5" color="#008080">
Your ID is   
:   <%=rs("StudentID")%></font></b>
```

Delete Student Record

```
<html>
<%@ Language=VBScript %>
```

```
<!--#INCLUDE file="include/odbc.inc" -->
<%

set rs=server.CreateObject("adodb.recordset")
set my_conn= Server.CreateObject("ADODB.Connection")
my_Conn.Open SourceDSN

sql = "select * from Student where AutoID=" & request.querystring("ID")
rs.Open sql,my_conn, 1, 2
rs.delete
%>
<head>
<meta http-equiv="Content-Language" content="en-us">
<meta http-equiv="Content-Type" content="text/html; charset=windows-1252">
<meta name="GENERATOR" content="Microsoft FrontPage 4.0">
<meta name="ProgId" content="FrontPage.Editor.Document">
<meta http-equiv=Content-Type content="text/html; charset=iso-8859-1">
<meta http-equiv=refresh content="2;URL=viewstudent.asp">

<title>New Page 1</title>
</head>
<body>
<font color="#FF0000" size="5"><b>Data Have been deleted.....</b></font>
</body>
</html>
```

CHAPTER 6:SYSTEM TESTING

6.1 INTRODUCTION

System Testing is a process to ensure entire application runs smoothly by testing the integrated system and verify whether the system meets the specified requirements. Once the coding and the integration of software have been completed, the system is put through a series of testing phases. Testing has a dual function; it is used to establish the presence of defects in a program and it is used to help judge whether or not the program is usable in practice.

Testing is a critical element in uncovering logical error and to test the system reliability. Therefore, testing can only demonstrate the presence of errors in a program. It cannot show that there a no errors in a program. The goal is to design tests that will uncover the greatest number of errors or classes of errors with the minimum amount of time and effort.

A number of stages in the testing process were undertaken they include unit testing, module testing, integration testing and system testing which will be discussed.

In developing system, testing usually involves several stages. First, each program is tested on its own, isolated from the other components in the system. Such testing is known as **unit/module testing**.

When the individual components are working correctly and meet the objective, these components are combined into a working system. **Integration testing** is done on the groups of integrated modules to verify that the system

components work together as described in the system and program design specifications.

System testing is the final testing procedure. A system test is a series of different tests designed to fully exercise the system to uncover its limitation measure its capabilities.

6.2 UNIT TESTING

Unit testing is a process used to verify that software code performs adequately and correctly implements the system design. Unit testing is performed to ensure that the individual components are tested and operate correctly as expected. Each unit of the system is tested independently, without other system components by using a set of the test cases. A good test case is one that uncovers a large number of errors in the software.

The unit testing was performed for all the data inputs to verify the expected outputs. If the required output was displayed, then the test is free from error. For the Student Feedback System unit level testing, the following three types of testing have been applied.

6.2.1 Ad Hoc Testing

Ad Hoc testing means that the author simply play with the functioning unit, trying whatever comes to mind, in attempt to make it fail. Ad Hoc testing is a fast and efficient way of debugging code errors during early development stage.

6.2.2 White Box Testing

White box testing basically involve looking at the structure of the code. It focuses on the idea of coverage. The main objective would be to check for missing function.

In this system, a branch coverage or node testing has been performed and loop testing was also done on data retrieving functions. Condition coverage for multiple condition statements has also been compounded.

6.2.3 Black Box Testing

Black box testing focuses on the functionality of the code. The main is to uncover those wrong functions programmed correctly, by feeding input to the black box and take notes on what output is produced..

6.3 INTERGRATION TESTING

Integration testing is a process of verifying that the system modules work together as described in the system and program design specification. After the unit test, the modules are integrated into a working system.

During the integration testing, two or more units in which either unit that uses output data from or provides input data for another unit for another unit were tested in collection. Multiple values of test data were entered through the interface to ensure that the values along the interface are correct and that the specific calls in the calling

modules are in the correct sequence and of the correct type and the values were inserted correctly into the database.

6.4 SYSTEMT TESTING

System testing is performed to uncover faults that may exist. This testing process is concerned with finding errors, which result from unanticipated interactions between sub-system and system components. It is also concerned with validations that the system meets its functional and non-functional requirements. One of the system test that was performed is:

- **Security Testing**

  This system is tested for improper penetration and unauthorized access, to ensure that the implementation of admin login are functioning accordingly.

6.5 INSTALLING TESTING

The final round of testing involves installing the system at user sites. To begin installation testing, configure the system to the user environment is needed. The test focuses on two factors:

- Completeness of the installed system
- Verification of any functional or non-functional that may be affected by site conditions.

6.6 SUMMARY

This chapter explains the details of various testing stages, techniques and method used to test the system. With the entire test that has been carried out, errors in the system are identified and removed and it minimize the risk of system failure.

SYSTEM EVALUATION

CHAPTER 7:SYSTEM EVALUATION

7.1 INTRODUCTION

System evaluation is the process of identifying a system's strength and limitations, thus allowing illustration of possible enhancement of the system in future. In order for the developed system to successfully achieve the goals, it must be accepted and utilized by the user.

At all phases of the system approaches, evaluation is a process that occurs continuously, drawing on variety of sources and information. An effective approach to system evaluation is bound to reduce the uncertainties associated with its implementation success.

The role of this evaluation phase was to determine:

- The extent to which the expected outcomes have been realized
- The prescriptive value of the process where extraneous factors were taken into consideration

Without an effective evaluation scheme, there is no clear basis for developers to learn from past experience to improve system development procedures.

7.2 SYSTEM STRENGTH

- User Friendliness

In this system, careful designing concepts had been put into designing the interface in order to promote user friendliness.

- Accurate and Timely Reports

Student Online Feedback system generate report immediately after the student give their feedback. Report generated by the system is accurate and will be updated automatically to the database.

- Availability and Convenience

As a web based application, this system is available to users 24 hours a day, 7 days a week. The availability guaranteed unless there are technical problem such as server down. As long as the intended users have access to the Internet, the system is available for all the users around the globe with no national boundaries.

7.3 SYSTEM LIMITATIONS

- Presently administrative staff is required to enter user name and password. As can be noted this not secure enough to safeguard the integrity of the database. More security features need to be undertaken for a foolproof identification.

- The admin module does not provide batch delete function. The administrator is required to delete any database record one by one

7.4 PROBLEMS AND SOLUTION

- During the design, one of the major obstacles is to apply the theoretical information gather in the previous phase into practice use. Reading through some of the documentation were quite helpful in solving the matter
- There were a few feedback system which cannot be viewed as only authorized personal can access in to it, it is hoped that these site create an extra link were outsiders will be able to view the feedback.
- Since there was no prior experience in developing a system, it was hard to determine to which extent to define the scope of the system so that it can be completed within the given time frame. However, this was overcame by analyzing and studying the related materials
- Technical problems had to be solved through various ways

7.6 FUTURE ENHANCEMNTS

Currently FSKTM is using the manual feedback system where the students or the lecturers have to distribute the form in class, wait until students give their feedback, collect the feedback and submit to the faculty which is very time consuming. Maybe in the future I will propose my system to the faculty for their use.

- Student have to read and answer the system in English, In future Malay language should be incorporated in the system so that it will be easy for those who is not good in English

- Help function should be included so that user can click on the button when the are having problem.

7.7 CONCLUSION

On the whole this project has achieved to deliver the system in the specified time frame. The Online Feedback System (SOFS) has been successful in attaining its primary objective that is to develop a system to monitor and assess the faculty courses in order to improve and increase the standard of learning. This electronic questionnaire enables students to take the survey at any remote location that has an internet connection. This is a web based system, so user from any location can have access to it at any time.

Throughout this project, a lot of experience and knowledge has been gained, Apart from technical knowledge, the project also helped to polish the non-technical knowledge, such as communication skills, organizing skills, sharpen the skills of report writing, practicing god time management, pressure handling and also problem solving skills.

In conclusion, this project was a great learning opportunity, both theoretical and in practical.

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